SPH 362: NEUROBIOLOGY OF COMMUNICATION  
SYLLABUS

Instructor: Gayle DeDe, Ph.D., CCC-SLP  
Office: SHS, Room 332  
Telephone: (520) 626-0831  
Email: gdede@arizona.edu (best way to contact me)

Office Hour: Tues 11 - 12 or by appointment  
Class Time: Tues & Thurs, 9:30 - 10:45  
Class Location: Chemistry Building, Rm 134

Textbooks


Note: Students are responsible for content covered in the assigned readings in Bhatnagar and all of the material covered in class. The Ward book addresses some of the gaps between what I will cover in class and the Bhatnagar book, thus providing additional reference materials and support to help you understand content covered in lectures.

Course Description

This course focuses on the role of the central nervous system in different aspects of human communication. The study of brain anatomy and physiology is approached from the perspective of how neurological systems support speech, language, and hearing and how breakdowns in these systems disrupt aspects of communication. Also note that as a Tier II General Education Class, this is a writing intensive class.

Learning Goals:

1) Students will use a scientific writing style to describe and evaluate scientific claims in peer reviewed journal articles and the popular press in writing assignments.

   Method of Assessment: Graded writing projects

2) Students will identify and describe how the human brain is structured from the cellular to systems levels.  
3) Students will identify and describe how regions of the brain support different communication functions.  
4) Students will describe how communication can be differentially disrupted with damage or abnormal development of the related brain systems.

   Method of Assessment: Written exams

Course Points

Total points for this class= 400 points. Grade assignments correspond to the following point totals:

A  90% or better (> 360)  
B  80-89.9% (320 – 359)  
C  70-79.9% (280 – 319)  
D  60-69.9% (240 – 279)  
E  <60% (<239)

Given the availability of bonus points and extra credit on tests and writing assignments, there will be NO rounding in the calculation of the final grade.
**Tests:** There will be 4 tests (60% of grade)
- **Test 1:** 40 points (10% of grade: lots of labeling, multiple choice, fill in the blank, short answer)
- **Tests 2 & 3:** 60 points each (15% of grade each: some labeling, multiple choice, fill in the blank, short answer, short essay)
- **Final Exam:** 80 points (20% of grade: Cumulative: Some labeling, multiple choice, fill in the blank, short answer, short essay)

*Note: This class is inherently cumulative. With the exception of the final exam, I will not explicitly test material from previous sections on the exams. However, I will assume you know the information when I write test questions.*

**TEST TAKING ETIQUETTE**
Much to my chagrin, some students cheat. Want to hear me rant? Ask me how I feel about cheating cheaters and the damage they do. As a result of the cheating cheaters, all students must abide by the following rules during tests:
1. Be on time. Entering late is disruptive to other students. If you arrive late, you may be asked to wait until there is a seat available that you can reach without disturbing any other students (end of row, etc). No tests will be handed out after the 1st student leaves the classroom.
2. You may not leave and re-enter the room for any reason during a test.
3. Do not hold up your test to read it. This is easily mistaken for showing your answers to a friend. All tests must remain flat on the table the whole time.
4. Keep your eyes on your paper or on me. Looking elsewhere is easily mistaken for cheating, and is likely to be treated as such.
5. Close your bag and place it under or behind your seat during tests.
6. Cell phones must be turned off and put away. If your cell phone rings, buzzes, beeps or otherwise makes an appearance, I will regard it as a possible occurrence of cheating and treat it accordingly.
7. Follow obvious rules: No unauthorized cheat sheets, no talking, etc.
8. I reserve the right to generate new rules.

**Writing Assignments (120 points):** There will be 2 papers:
- **Paper 1:** 45 points (Version 1 = 10 points, Version 2 = 35 points. If you do not submit version 2, version 1 will be worth 45 points.)
- **Paper 2:** 60 points (Version 1 = 15 points, Version 2 = 45 points. If you do not submit version 2, version 1 will be worth 60 points.)

See D2L for very detailed instructions about these assignments, including the grading rubric. Note that you will have several opportunities to revise your papers. You are encouraged to meet with the professor, preceptors, and TAs to discuss your paper. In order to be fair and avoid pre-grading papers, we will not look at papers that are emailed to us. You should bring specific questions about your paper (i.e., You should not ask, “Does this look ok?” because we cannot pre-grade your paper. You can ask, “Is this sentence clear?”).

**On-line Writing Tutorials (15 points):** You will complete writing modules from the website create.arizona.edu. You will earn points based on your total score on the tutorials.

**Class Participation (10% of grade, 40 points):**
Primarily determined by class attendance, which will be assessed randomly by completion of in-class writing assignments and taking attendance. Students who miss more than 15% of the random samples (due to missing
class, being tardy, or leaving early) will be docked participation points. Participation points will also be
determined by asking/responding to questions, sleeping or texting in class, being polite to your classmates, etc.

**Grading Disputes:**
If you wish to question the grading of any test or paper, the request must be made in writing (e.g., via email)
within 1 week of the date that the test or paper was returned to the class (whether or not you attended that
class). The assignment will be entirely re-graded, which may result in a higher or lower final grade. After a test or
paper has been re-graded, the final grade is non-negotiable. The only exception to the regrading policy is
mathematical errors.

**Bonus Points**
You may receive up to 4 bonus points for completing a or b below (but not both)

a. Volunteer to participate in research studies relevant to speech, language, and hearing sciences. You can
earn 1 extra credit point for every hour or part of an hour in an experiment you complete, for up to 4 points.
Print the form on the D2L course site and ask the researcher to indicate the number of hours of participation
and sign the form. The form should be submitted on 12/4 unless you receive written permission from Dr.
DeDe to submit your form later. Please do not submit them earlier than 12/4, to prevent them being lost.

b. Complete a critical review of two journal publications describing an investigation relevant to neurobiology of
communication that were published within the last 12 months (and do not relate to the paper topics). Dr.
DeDe must approve your articles. In order to have your articles approved, email the papers (pdf) to Dr.
DeDe. **Allow at least one-week turn around time before you expect approval.** That is, if you submit a paper
on November 13th you should not expect it back from Dr. DeDe until November 20th. Critical reviews should
be turned in on **December 4th** and can receive up to 4 points extra credit. See the D2L web site for further
information.

**Class Policies**

**Email**
Important email messages regarding the class will be sent through the D2L system. It is your responsibility to
check your D2L email daily to ensure that you receive these messages.

**Disabilities Accommodations:**
If you anticipate barriers related to the format or requirements of this course, please meet with me so that we
can discuss ways to ensure your full participation in the course. If you determine that disability-related
accommodations are necessary, please register with Disability Resources (621-3268; drc.arizona.edu) and notify
me of your eligibility for reasonable accommodations. We can then plan how best to coordinate your
accommodations. Disability accommodations will not be provided to students not registered with the DRC.
Accommodations must be planned for well in advance. You must be registered with the DRC and talk to me
within the first three weeks of the semester to make arrangements. Note that we are unable to provide
extended time on tests within the department. If you and the DRC determine that this is an appropriate
accommodation, you must arrange to take tests at the DRC testing center.

**Late Assignments, Make-up Exams, etc:**
In the case of an unexpected emergency or severe illness (e.g. vomiting, fever, highly contagious illness) that
prevents you from handing in an assignment on time or taking an exam, you must inform Dr. DeDe within 24
hours (preferably sooner) either by email or phone. Late papers will lose 1 letter grade (10%) per day that they
are late. Make-up exams will only be given under extremely extenuating circumstances, will be given during the
final exam period, and may (at Dr. DeDe’s discretion) be given in oral exam format. Documentation (doctor’s
note, newspaper article, police report) will help your cause.
**Attendance:** All holidays or special events observed by organized religions will be honored for those students who show affiliation with that particular religion. In addition, absences pre-approved by the UA Dean of Students (or Dean designee) will be honored.

**Academic Integrity:**
Students are encouraged to share intellectual views and discuss freely the principles and applications of course materials. However, graded work/exercises must be the product of independent effort unless otherwise instructed. Students are expected to adhere to the UA Code of Academic Integrity as described in the UA General Catalog. See: http://deanofstudents.arizona.edu/codeofacademicintegrity/. Academic dishonesty (including cheating and committing or facilitating plagiarism, intentional or accidental) will not be tolerated and will result in sanctions. Also note that the instructor has the right to use web-based anti-plagiarism search tools.

**Classroom Conduct:**
The overarching rule for classroom conduct is to be respectful of the teaching team and fellow students. Some more concrete rules include:

a. Please turn off all cell phones during class. If you must take a call for emergency purposes, please place your phone’s ringer on silent or vibration and leave the room immediately to answer your phone.

b. Please be on time and don’t leave early. Note that attendance is typically taken at the very beginning or very end of class. If you miss attendance because you arrived late or left early, it will be treated as a missed class.

c. Please do not hold side conversations or engage in other types of disruptive behavior (e.g., packing your bag before the end of class). If you have questions, ask the instructor rather than your neighbor. Repeated disruptive behavior may result in deduction of participation points, and you may be asked to leave the classroom.

d. The Arizona Board of Regents’ Student Code of Conduct, ABOR Policy 5-308, prohibits threats of physical harm to any member of the University community, including to one’s self. You may refer to the following website to read the University of Arizona’s policy against threatening behavior by students: http://policy.web.arizona.edu/threatening-behavior-students.

*With exception of the grading and attendance policies, information contained in this syllabus may be subject to change with advance notice as deemed necessary.*

*Any student who does not understand or accept the contents and terms of this syllabus must notify the instructor in writing within 2 class periods of receiving the syllabus (i.e., by August 28).*
<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
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| Tues, Aug 26| Course overview  
Why the writing emphasis? What is neurobiology of communication? |
| Thurs, Aug 28| Overview of the Central Nervous System  
*Reading:* pp. Chapter 1: 7-34, Chapter 2: 35-64, 69-83, Chapter 3 (Skip sections on the spinal cord.)  
*Web review:* the Digital Anatomist (on D2L)  
*Recommended:* Ward, Chapter 2, plus use the index! |
| Tues, Sep 2 | Overview of the Central Nervous System  
*Reading:* pp. Chapter 1: 7-34, Chapter 2: 35-64, 69-83, Chapter 3 (Skip sections on the spinal cord.)  
*Web review:* the Digital Anatomist (on D2L)  
*Recommended:* Ward, Chapter 2, plus use the index! |
| Thurs, Sep 4| Overview of the Central Nervous System  
*Reading:* pp. Chapter 1: 7-34, Chapter 2: 35-64, 69-83, Chapter 3 (Skip sections on the spinal cord.)  
*Web review:* the Digital Anatomist (on D2L)  
*Recommended:* Ward, Chapter 2, plus use the index! |
| Tues, Sep 9 | Overview of the Central Nervous System  
*Reading:* pp. Chapter 1: 7-34, Chapter 2: 35-64, 69-83, Chapter 3 (Skip sections on the spinal cord.)  
*Web review:* the Digital Anatomist (on D2L)  
*Recommended:* Ward, Chapter 2, plus use the index! |
| Tues, Sep 9 | **Assignment Due:** Complete Writing Modules at Create.Arizona.Edu |
| Thurs, Sep 11| Tips for Scientific Writing & In-class peer review  
*Web review:* the Digital Anatomist (on D2L) |
| Thurs, Sep 11| **Writing Assignment 1 Due in Class for Peer Review**  
NO GRACE PERIOD |
| Tues, Sep 16| Pathways through the Brain: White Matter Tracts  
*Required:* Bhatnagar, Chap 6; pp. 48-50, 73-78 |
| Thurs, Sep 16| **Writing Assignment 1 Due in Class (D2L Dropbox & Hard Copy)**  
Grace Period: 9AM on Wednesday (9/17) in D2L dropbox AND in my office. |
| Thurs, Sep 18| SMALL GROUP REVIEW: Gross brain anatomy  
(Bring your notes, handout from D2L, and text book) |
| Tues, Sep 23| **Quiz 1: Structural Anatomy** |
| Thurs, Sep 25| Neurodevelopment: Embryology, the appearance of cells, and cell architecture  
*Reading:* Chapter 4; *Recommended:* Ward, Chapter 16 |
| Tues, Sep 30| Neurodevelopment: Embryology, the appearance of cells, and cell architecture  
*Reading:* Chapter 4; *Recommended:* Ward, Chapter 16 |
| Thurs, Oct 2| Review of Writing Assignment I: Editing to improve your grade |
| Tues, Oct 7 | Cellular connectivity: Neurons  
*Reading:* Chapter 5  
*Recommended:* Ward Chapter 2 |
| Thurs, Oct 9| **Revision of Paper 1 (Version 2) Due in Class**  
Grace Period: Friday (10/10) at 9 AM in D2L dropbox AND in my office. |
| Thurs, Oct 9| SMALL GROUP REVIEW: Neurons & Neurodevelopment  
(Bring your notes, handout from D2L, and text book) |
| Tues, Oct 14| Introduction to Sensorimotor Systems  
Primary Systems I: Hearing  
*Reading:* Chapter 9 |
| Thurs, Oct 16| Introduction to Sensorimotor Systems  
Primary Systems I: Hearing  
*Reading:* Chapter 9 |
<p>| Tues, Oct 21| CATCH UP &amp; SMALL GROUP REVIEW: Hearing |</p>
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<tr>
<th>Date</th>
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<tbody>
<tr>
<td>Thurs, Oct 23</td>
<td><strong>Test 2: Neurons through Hearing.</strong></td>
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<td>Tues, Oct 28</td>
<td>Primary Systems II: Vision</td>
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<td>Thurs, Oct 30</td>
<td>Reading: Chapter 12; Recommended: Ward Chapters 6 (&amp; 7, if you are very interested!)</td>
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<tr>
<td>Thurs, Oct 30</td>
<td><strong>Writing Assignment 2 Due in Class</strong></td>
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<td>Grace Period: 9 AM on 10/31 in D2L dropbox AND in my office.</td>
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<td>Tues, Nov 4</td>
<td>CATCH UP &amp; SMALL GROUP REVIEW: Vision</td>
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<td>(Bring your notes, handout from D2L, and text book)</td>
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<td>Thurs, Nov 6</td>
<td>Motor System</td>
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<td>Thurs, Nov 13</td>
<td>Reading: Chapters 14, 15, &amp; 16; Recommended: Ward, Chapter 8</td>
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<td>Tues, Nov 11</td>
<td>Veteran’s Day: No Classes. Thank a veteran!</td>
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<td>Tues, Nov 18</td>
<td>CATCH UP &amp; SMALL GROUP REVIEW: Motor System</td>
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<td>(Bring your notes, handout from D2L, and text books)</td>
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<td>Thurs, Nov 20</td>
<td><strong>Test 3: Visual and Motor Systems</strong></td>
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<td>Tues, Nov 25</td>
<td>Introduction to Language in the Brain</td>
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<td>Tues, Dec 2</td>
<td>Reading: Chapter 19; Recommended: Ward, Chapter 11 &amp; 14</td>
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<td>Tues, Nov 25</td>
<td><strong>Revision of Writing Assignment 2 Due in Class</strong></td>
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<td>Grace Period: Weds (11/26) at 9 AM in D2L dropbox AND in my office.</td>
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<td>Thurs, Nov 27</td>
<td><strong>Thanksgiving. Eat tasty treats!</strong></td>
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<td>Thurs, Dec 4</td>
<td>CATCH UP &amp; SMALL GROUP REVIEW: Neurobiology of Language</td>
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<td>Tues, Dec 9</td>
<td>Wrap up &amp; Review for Final</td>
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<td>Weds, Dec 17</td>
<td><strong>FINAL EXAM 10:30 – 12:30</strong></td>
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For those choosing Speech, Language, & Hearing Sciences as their major, you will need a record of the following ASHA Standards met by SPH 362

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<th>Learner Outcomes</th>
<th>IV-B</th>
<th>IV-C 1</th>
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